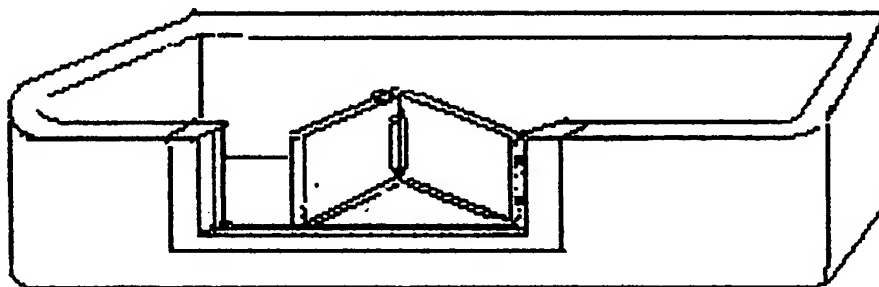


(72) Cornies, Ernest Henry, CA  
(72) Cornies, Walter Werner, CA  
(71) Cornies, Ernest Henry, CA  
(71) Cornies, Walter Werner, CA  
(51) Int.Cl.<sup>6</sup> A47K 3/022  
(54) **BAIGNOIRE A PORTE D'ACCES DIRECT**  
(54) **THE STEP IN TUBDOOR SYSTEM**



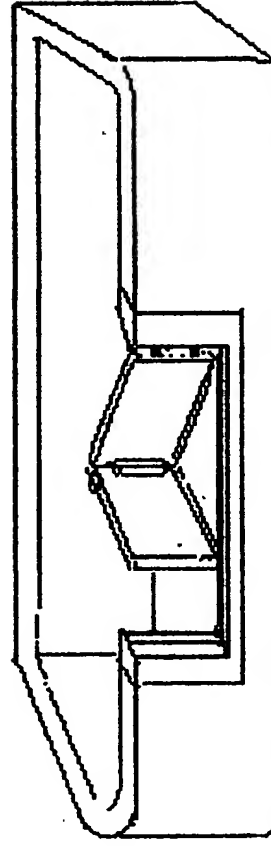
(57) L'objet de la présente invention est une porte comportant un ou deux panneaux articulés dont l'ouverture permet à un utilisateur ou à une personne soignante d'accéder librement à l'intérieur d'une baignoire vide. En se refermant, la porte vient prendre appui sur un boudin d'étanchéité en caoutchouc ou en vinyle. Une came à excentrique avec mécanisme de verrouillage fournit la pression nécessaire pour maintenir la porte en place dans une gorge aménagée dans l'encadrement de la porte, et un galet circulant librement à l'intérieur de la gorge sert à guider l'extrémité libre de la porte. Le mécanisme de verrouillage est logé à l'intérieur d'un manchon dont la partie supérieure est élargie pour accommoder un ressort et un collet relié à un axe de verrouillage et commandé par une poignée pivotante. Celle-ci sert à désengager l'axe de verrouillage et la came à excentrique de la gorge lorsque la porte est en position ouverte. Une simple poussée vers le bas accompagnée d'une rotation produisent une pression suffisante pour assurer l'étanchéité de la porte et verrouiller celle-ci afin de prévenir toute ouverture accidentelle. L'accumulation d'eau à l'intérieur de la

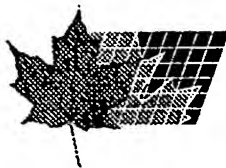
(57) The TUBDOOR consists of a panel door, with one or two panels, hinged to open freely into an empty tub to allow the user or caregiver to enter. The door is designed to close against a round rubber or vinyl seal to create a water proof closure. To provide pressure to the door against the seal an off-center cam locking wheel fits into a channel that is provided in the sill to accommodate this lock and a guide for the unhinged end of the door panel. This guide is a tumbler that is inserted in the bottom of the door panel loosely and rides in the channel freely. The locking device is held in a sleeve that is widened at the top to receive a spring and a collar that is attached to a shaft and a twist handle. This lifts the shaft and cam out of the channel when not in use. To seal the door a simple push down and twist provides enough pressure to seal the panel and provide a safety lock to prevent accidental opening. As the water is on the opposite side to the seal, any pressure generated by the water would assist in the sealing. To contain any possible seepage that could occur, the sill of the door frame has been fitted with a perforated drain channel leading to a seepage reservoir that is connected to the standard tub waste and overflow.

# THE STEP IN TUBDOOR SYSTEM.

OUR SOLUTION TO A PROBLEM FOR THE AGED AND HANDICAPPED  
HAVING A FULL BATH WITHOUT ANY EXPENSIVE AND SPACE  
CONSUMING DEVICES. A SIMPLE WATERTIGHT DOOR AND  
FRAME SYSTEM FOR MANUFACTURE OR AFTERMARKET  
CONVERSION OF STANDARD BATHTUBS.

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(21) (A1) **2,195,026**  
(22) 1997/01/14  
(43) 1998/07/14

baaignoire ne fait que contribuer à l'étanchéité de la porte. Pour contrer tout risque d'écoulement, la partie inférieure du cadre de la porte est pourvue d'une canalisation perforée pour assurer l'évacuation vers un collecteur raccordé au drain et au trop-plein de la baignoire. Dans les configurations à un seul panneau, le galet de guidage est supprimé et le mécanisme de verrouillage à came est monté à l'extrémité libre de la porte.

In a single panel door application the tumbler guide is eliminated and replaced by the twist cam lock at the non hinged end.



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## **CLAIMS**

**"The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:"**

**In most situations seniors and handicapped persons find it difficult or impossible to get in or out of a standard bathtub. The step over the front of the bathtub is prohibitive without expensive or awkward aids. To facilitate easier access the TUBDOOR system provides a doorway with a low sill that can be easily traversed by the aged and borderline handicapped people. The door also provides easier access for disabled persons being assisted by professional caregivers.**

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#### **SPECIFICATION**

**This invention relates to a manually operable door to provide access to a bath tub through the side wall.**

**It is common for persons wanting to use a bathtub to have to step over a wall of an awkward height prohibiting aged and handicapped use without help or some type of device. In the TUBDOOR system one simply opens the door, steps into the tub, without any assistance or any aid devices. Then easily closes the door and fills the tub for a leisurely bath, that was previously not available to them.**

**To open the door twist cam lock handle (diagram A) to loosen seal of the door and allow the spring to lift it out of the guide channel. Push the center of the two panels causing the door to swing on the jamb hinge, at the same time folding the panels at the center hinge. As the door opens and folds the distance covered by the door diminishes causing the tumbler guide (diagram D) to slide toward the hinge on the jamb (diagram B). On completion of the fold the panels will be at the side of the opening allowing access to the tub.**

**To close the door pull the tumbler end of the panels away from the hinge causing the tumbler to slide in the guide channel (diagram C) unfolding the door. When the door is totally extended all the seals (diagram D) will be in contact with the jambs. At this point the twist cam lock is pushed down and twisted, tightening the seal and completing closure. The tub now can be filled with water.**

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## **ABSTRACT**

The TUBDOOR consists of a panel door, with one or two panels, hinged to open freely into an empty tub to allow the user or caregiver to enter. The door is designed to close against a round rubber or vinyl seal to create a water proof closure. To provide pressure to the door against the seal an off-center cam locking wheel fits into a channel that is provided in the sill to accommodate this lock and a guide for the unhinged end of the door panel. This guide is a tumbler that is inserted in the bottom of the door panel loosely and rides in the channel freely.

The locking device is held in a sleeve that is widened at the top to receive a spring and a collar that is attached to a shaft and a twist handle . This lifts the shaft and cam out of the channel when not in use. To seal the door a simple push down and twist provides enough pressure to seal the panel and provide a safety lock to prevent accidental opening. As the water is on the opposite side to the seal, any pressure generated by the water would assist in the sealing.

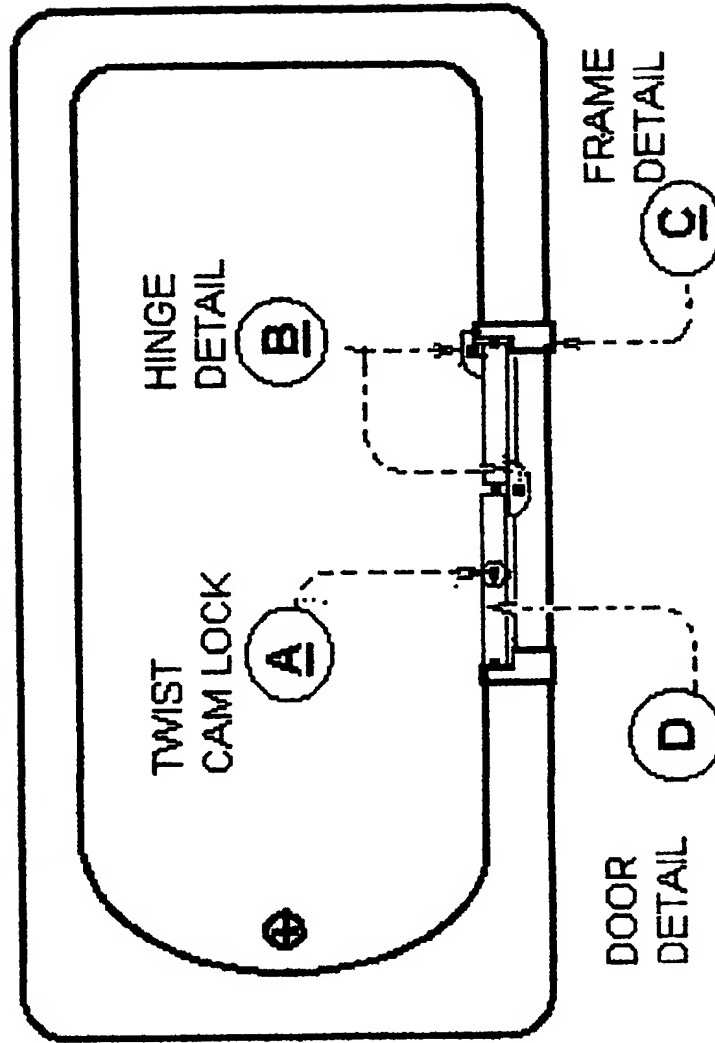
To contain any possible seepage that could occur, the sill of the door frame has been fitted with a perforated drain channel leading to a seepage reservoir that is connected to the standard tub waste and overflow.

In a single panel door application the tumbler guide is eliminated and replaced by the twist cam lock at the non hinged end.

# TOP VIEW

PAGE 1

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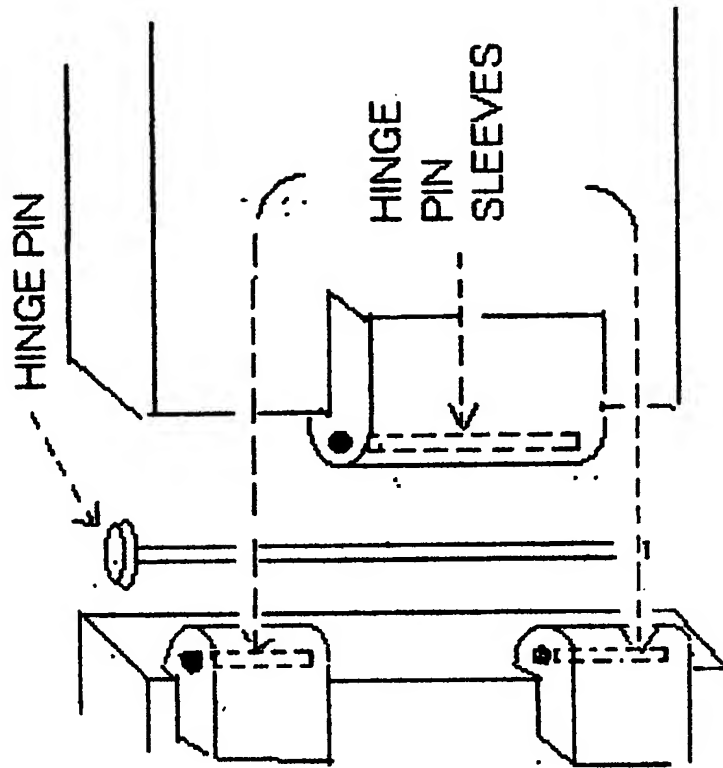


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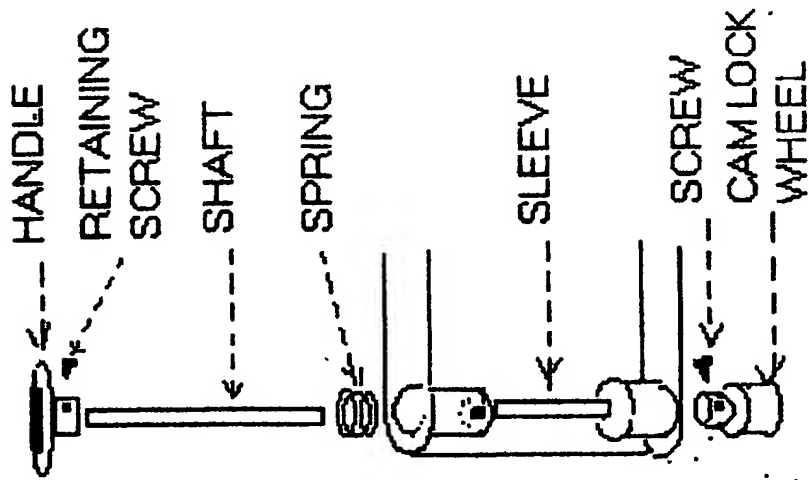
**B**

HINGES



**A**

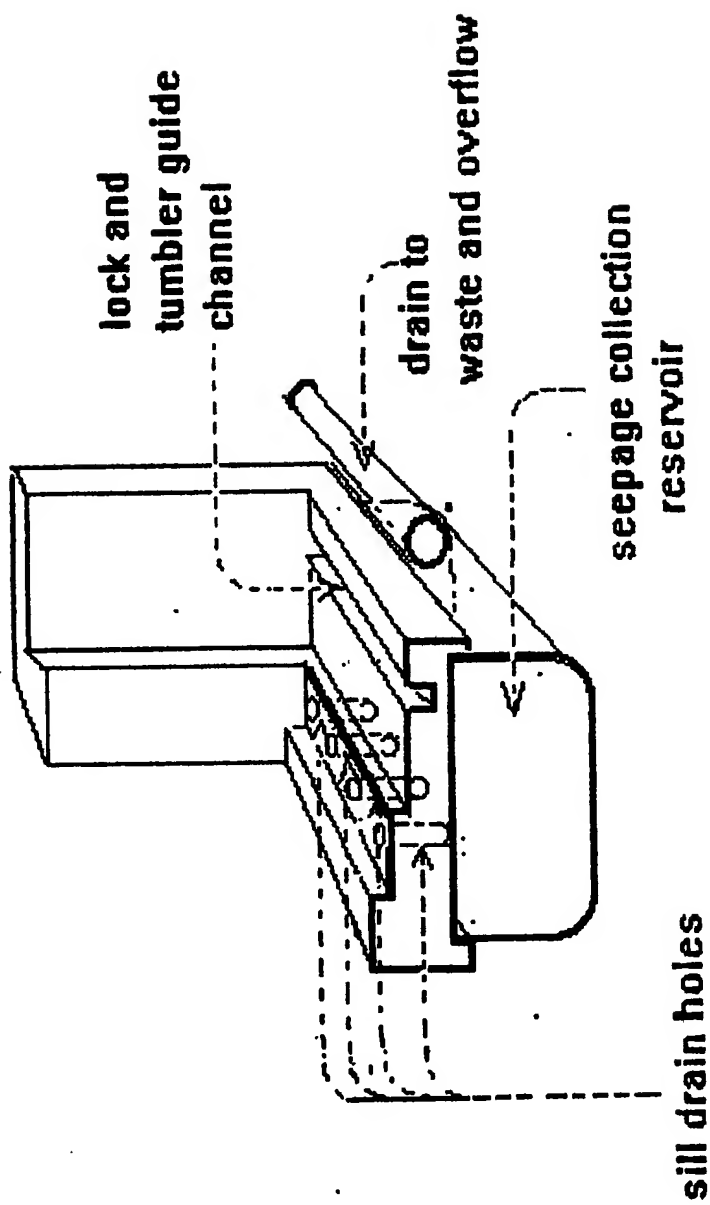
TWIST CAM LOCK





22

SILL AND JAMB ©  
CROSS SECTION

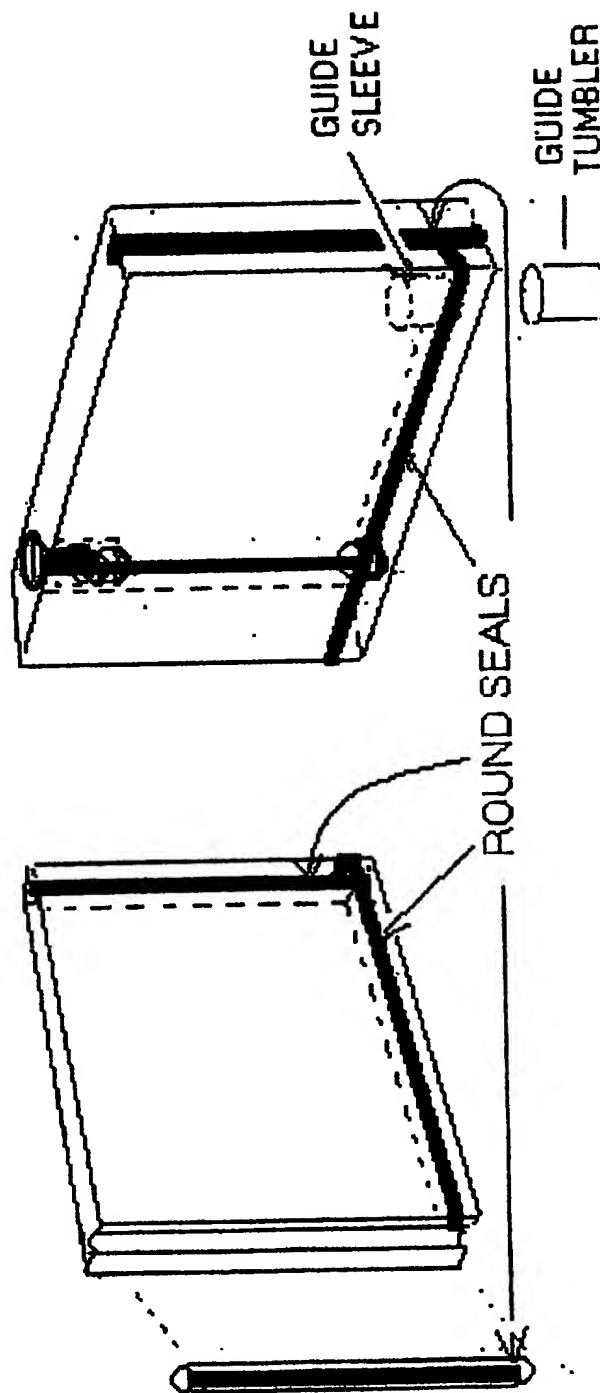


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PAGE 4

# DOOR ASSEMBLY D

LOCK AND HINGE ILLUSTRATED IN DETAILS A+B



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